CLAIMS

1. An intake device of an internal combustion engine, characterized by comprising a resonator including a resonating body which is vibrated by intake air pulsation in an intake system, a volume chamber connected through the resonating body to the intake system, and a volume chamber opening section through which an interior space of the volume chamber is communicated with outside, wherein the interior space of the volume chamber and interior of the intake system are partitioned by the resonating body, wherein the resonator is so set that a sound pressure in a certain frequency range is released from the volume chamber opening section to the outside under vibration of the resonating body.

2. An intake device of an internal combustion engine as claimed in Claim 1, characterized in that a setting is made such that sound pressure of air intake sound increases with an increase in engine speed by adding sound pressure released from the resonator to the air intake sound.

3. An intake device of an internal combustion engine as claimed in Claim 2, characterized in that the volume chamber opening section is close to at least one of a dash panel or either one of right and left side panel of panels defining an engine compartment.

4. An intake device of an internal combustion engine as claimed in Claim 3, characterized in that the intake device comprises a plurality of the resonators which are set to release respectively sound pressures in frequency ranges similar to each other through the respective volume chamber opening sections to the outside, the plurality of resonators being installed to the intake system in such a manner that the sound pressures to be released from the respective resonators are released to

the outside with a certain time difference between the sound pressures.

5. An intake device of an internal combustion engine as claimed in Claim 4, characterized in that the resonating body is set such that the sound pressure in a frequency range of (engine speed / 60) × (natural number / 2) is released from the volume chamber opening section in a certain engine speed range of the engine.

6. An intake device of an internal combustion engine, characterized by comprising an intake air passage through which intake air is introduced into the internal combustion engine, and a resonance passage branched off from the intake air passage,

wherein the resonance passage has one end opened to atmospheric air and the other end connected to the intake air passage, the resonance passage having a passage length set to add a sound pressure in a certain frequency range to air intake sound.

7. An intake device of an internal combustion engine as claimed in Claim 6, characterized in that a sound-transmissible material having a gas permeability is disposed in the resonance passage.

8. An intake device of an internal combustion engine as claimed in Claim 6, wherein characterized in that

an air cleaner is disposed in the intake air passage,

the resonance passage being communicated with the intake air passage at an upstream side of the air cleaner,

wherein a change-over valve is disposed in the intake air passage at a connecting section to which the resonance passage is connected, the change-over valve being adapted to close either one of the resonance passage and an upstream side section of the intake air passage relative to the connecting section and open the other in accordance with an

engine operating condition,

wherein the change-over valve whose at least a part is formed of a sound-transmissible material having a gas permeability.